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Force
- A push or pull in a certain direction with a certain magnitude.
- A vector quantity.
- f= m * a
  o f-force (N)
  o m-mass (Kg)
  o a-acceleration(m/s²)
- Weight is a force ,not a mass!
- 1G= 9.8 m/s²

Example:
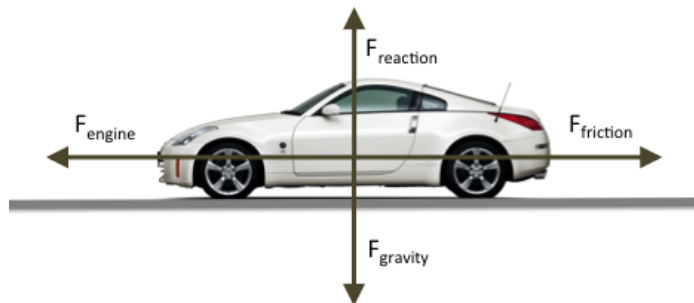What is the acceleration of a 50 kg object pushed with a force 500N?
f=m* a
f-500N
m-50 Kg
a-?
1. 500=50*a
2. 500/50=(50*a)/50
3. a=10m/s²

Free Body Diagrams
- A physical force that represents the forces acting on a system.
  o System- Objects that can interact with each other in the world .

$F_{reaction}$

F_{engine} $F_{friction}$

$F_{gravity}$

  o Fg-force of gravity – Force of gravity on car is (kgm/s²)

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- o Fn(F reaction on picture) –normal force- force that opposes gravity and keeps things still
- o Fnet(engine on picture)- force moving the car horizontally ,it is greater than Fr moving in the direction of Fnet.
- o Fr or Ff – force of friction -the resistance force that opposes the F net force , the Fnet must overcome the F r to move .
- Normal force is weaker on an incline but gravity remains the same.
  - o Hypotenuse ($\cos\theta$) =(adjacent/hypotenuse)